REMARKS

In reviewing the specification, an explanation causing confusion was found. Thus, the specification has been amended.

In view of the Action, claim 1 has been amended to further clarify the features of the invention. Also, new claims 20 and 21 have been filed. Claims pending in the application are patentable over the cited references, as explained below.

In the variable cut-off rotary printing machine of the invention, when the cut-off length of the web is changed, the web conveying speed Vo is changed and the speed change pattern of the speed change roller and the speed change belts is adjusted, as well, without changing other driving mechanisms or machines.

Namely, in order to change the cut-off length, the diameter of the cut-off unit, i.e. saw cylinder and receiving cylinder, is changed as in the printing cylinder. In this respect, if the rotational speed of the cut-off unit is not changed, the peripheral speed of the cut-off unit changes. For example, since the outer diameter of the cut-off unit is increased in order to increase the cut-off length, the peripheral speed of the cut-off unit increases. On the other hand, in order to shorten the cut-off length, since the outer diameter of the printing cylinder is reduced, the peripheral speed of the printing cylinder decreases.

In this respect, it is required to set the peripheral speed of the printing cylinder and the cut-off unit, i.e. saw cylinder and the receiving cylinder, to correspond to the transfer speed of the web. For this purpose, generally, the transfer speed of the web is constant and the peripheral speed of the printing cylinder and the cut-off unit are changed accordingly. Namely, the transfer speed of the web is not changed while the rotational speeds of the printing cylinder and the cut-off unit are changed.

In the present invention, on the contrary, the transfer speed of the web is changed according to the cut-off length to thereby eliminate the change of the rotational speed (phase changer of the cylinder drive means).

In the folding machine transferred after cutting-off the web, unless the folding machine is changed, there is a fixed sheet transfer speed according to the folding machine. In the general printing machine, the printing cylinder, saw cylinder and folding machine are set to process the web or sheet transferred thereto with the predetermined speed. If the web transfer speed is changed according to the cut-off length, though the

saw cylinder can cope with the change of the web transfer speed because the saw cylinder simply cuts off the web. However, the folding machine can not cope with the change of the web transfer speed easily.

In the present invention, in order to process the sheet at the predetermined speed Vb at the processor, the cut sheet is changed at first to the sheet transfer speed equal to the web transfer speed V0 according to the cut-off length, and then to the predetermined speed Vb according to the processor.

In the invention, according to the cut-off length of the web, the web transfer speed and the first belt conveyor speed are changed. However, the predetermined speed Vb at the process does not change. Thus, the second belt conveyor changes the speed from V0 to Vb.

In this case, a large capacity phase changer apparatus or roller for a cylinder drive unit is not required in the present invention, so that the space for the drive unit can be reduced. Also, the drive control can be made easily, and the printing quality is stable. The cited references do not disclose or suggest this feature.

In paragraph 4 of the Action, claims 1, 8-10 and 12-13 were rejected under 35 U.S.C. 103(a) as being unpatentable over Petersen in view of Franklin.

Petersen discloses an apparatus for folding and handling of printed materials, wherein webs of printed material are delivered to pairs of cutting cylinders 5a, 5b, and after that they travel through pair of web breaking rollers 6a, 6b. It is also disclosed in Fig. 4 that in a station 13, belts 97, 98 in the speed V1 and belts 99, 100 in the speed V2 are connected through belts 101, 102, which are rotated by friction of the sheet transferred from the belts 97, 98.

In Petersen, therefore, the first and second belt conveyers are not partly directly overlap each other. Further, Petersen does not consider the variable cut-off, which carries out the cut-off operation with the variable cut-off length of the web.

The feature now clearly recited in claim 1 is not disclosed by Petersen.

Franklin was cited to disclose variable diameter cylinder for use in printing unit, i.e. printing press. Although Franklin discloses the variable diameter cylinder for the printing press, the folding mechanism including the cut-off unit and the first and second belt conveyers is not disclosed or suggested in Franklin.

Therefore, claim 1 is not obvious from Petersen and Franklin.

In paragraph 5 of the Action, claims 1, 8-10 and 13 were rejected under 35 U.S.C. 102(b) as being anticipated by Reffert in view of Franklin et al. and Vijuk. It is assumed that claims were rejected under 35 U.S.C.103(a) as being obvious over Reffert in view of Franklin and Vijuk.

Reffert discloses a folding device comprising a cut-off unit with cutting mechanisms/rollers 14; a first belt conveyor 10a; a second belt conveyor 10b; and a downstream processor, wherein the first belt conveyor 10a operates at a slower speed than that of the second belt conveyor 10b. Accordingly, the speed of the cut sheets is accelerated. Also, in Reffert, a collecting/catching cylinder 1 with grippers 2, folding blades 3 and a folding cylinder 4 form folded creases transversely to the conveying direction. Further, Reffert includes a stop member 23 for receiving the sheets.

In Reffert, however, it is not disclosed or suggested that cut-off unit is constructed to vary a cut-off length of the web fed from the printing unit. Also, the printing unit is not disclosed in Reffert.

Vijuk discloses an apparatus for folding sheets and adhering an outer fold to the inner fold, wherein the cut-off length of the sheet can be varied (column 4, lines 55 to 60), and a belt conveyor 108 is activated by a variable speed drive unit (column 7, lines 42 to 46). However, it is not disclosed the variably cut sheet can be taken by the second belt conveyer and transfer to the predetermined fixed speed in Vijuk.

In Franklin, as explained before, variable diameter cylinder for use in printing unit, i.e. printing press, is simply disclosed.

Therefore, even if the inventions of Reffert, Franklin and Vijuk are combined, the idea as described in claim 1 of the present invention is not obtained. As a result, rejection for claim 1 of the present invention cannot be satisfied.

In paragraph 6 of the Action, claims 3-4 were rejected under 35 U.S.C. 103(a) as being unpatentable over Petersen in view of Franklin and Stab.

Stab was cited to show perforators 4 and cut-off cylinders 6 with conveyer belts. Although Stab discloses the perforators 4 and cut-off cylinders 6 spaced apart from each other, the first and second belt conveyors changing the speed of the sheets are not disclosed or suggested. Therefore, claims 3 and 4 are not obvious from the Peterson in

view of Franklin and Stab.

In claim 20, it is recited that the cut-off unit comprises a saw cylinder and a receiving cylinder contacting the saw cylinder, an outer diameter of each of the saw cylinder and the receiving cylinder as well as a feeding speed of the web to the cut-off unit being changed when the cut-off length of the web is changed.

In claim 21, it is also recited that the first and second belt conveyors are configured such that in changing the cut-off length of the web, the first conveyer is set to change a speed corresponding to the feeding speed of the web, and the second belt conveyer is set to change a speed substantially corresponding to the speed of the first conveyer in receiving the cut web from the first conveyer and to increase the speed to the constant second speed corresponding to the processor when delivering the cut web to the processor.

Features as recited in claims 20 and 21 are not disclosed or suggested in the cited references.

Reconsideration and allowance are earnestly solicited.

One month extension of time is hereby requested. A credit card authorization form in the amount of $130.00 is attached herewith for the one month extension of time.

Respectfully submitted,

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